



THOMAS G. NEWMAN,
EDITOR.

Vol. XXV. June 15, 1889. No. 24.

EDITORIAL BUZZINGS.

The National Flower of America is now receiving attention. Bee-keepers should vote for the Golden-rod.

England boasts of glorious weather just now, with heavy bloom everywhere, and the bees are gathering honey rapidly. *The Record* is rejoicing over the fact.

The Western Apianian is a new bee-paper published in Placer county, Calif. It contains 16 pages and a cover; and is published monthly at 50 cents a year, by S. L. Watkins and F. E. McCallum.

The Present High Price of Sugar will help the price of honey, if it continues a little while longer. Honey may be used to advantage in place of sugar—nay, it is vastly superior to it for preserves, and in making many kinds of cake, palatable summer drinks, as well as in cooking. Let bee-keepers see to it that it shall be thoroughly introduced, and its use secured in every available manner, both by house-keepers and manufacturers of mead, candles, pastry cooks, etc.

A Painted Bee.—Mr. W. F. Kennecott, Lax, Wis., sent what he called "a queer looking bee taken from an Italian colony." Prof. Cook remarks thus concerning it:

The bee sent by Mr. Kennecott is simply covered with red paint. I had always supposed that bees had too good sense to practice these questionable methods. But this is a genuine worker bee, and the brilliant carmine seems genuine. Either some one has been trying experiments, or else this bee got into a tight place with paint all about.

An Appalling Calamity has overtaken the inhabitants of Conemaugh Valley, Pa. On Friday afternoon, May 31, the dam gave away up in the mountains, and a flood of water rushed down the valley, sweeping everything before it. The villages were destroyed—buried beneath 40 feet of water. Over 13,000 persons were drowned. There was no time for escape. Before the irresistible deluge houses, stores, factories, public buildings were torn to fragments and swept away.

The stone railway bridge below the city, on the Conemaugh river, resisted the pressure of the flood; its arches became choked, and there a huge mass of debris accumulated. The many hapless ones on the rafts, and in floating houses, on that angry flood, were burned in the fire, which ignited from the fires and lamps in the houses. The horrible torture of that doom is appalling.

An unknown man rode down the valley, mounted on a big bay horse, just before the flood, shouting, "Run for your lives! Run to the hills!" The people were awe-stricken. But few comparatively fled, for in a few moments there came a cloud of ruin down the broad streets; down the narrow alleys, grinding, twisting, hurling, overturning, crashing, annihilating the weak and the strong! It was the charge of flood wearing its coronet of ruin and devastation, which grew at every instant of its progress. On and on raced the rider, and on and on rushed the wave! Dozens of people took heed of the warning, and ran up the hills. Poor, faithful rider! It was an unequal contest. Just as he turned across the railroad bridge, the mighty wave fell upon him, and horse, rider and bridge all went out into chaos together.

The whole country is touched in sympathy, and from East, West, North and South financial aid, food and clothing are pouring in to the relief of the stricken inhabitants left in the valley. Our people are voted for giving full-rein to the most generous promptings of practical sympathy. This gives strength to our confidence in humanity.

Sweet Clover.—Mr. C. H. Dibbern talks about sweet clover, in the *Western Plowman*, and gives his way of management in these words:

This year our three-acre field of sweet clover will be no good, that is for the bees, as we have sown it in oats. I have experimented a good deal in the past ten years with sweet clover. How to get a good stand of clover every year has been the problem, and I have come to the conclusion that it cannot be done. I think I have hit on a better plan.

I think that no biennial plant can be made to flower on the same piece of land every year. In the case of mellilot or sweet clover it is, perhaps, best to sow it with oats early in the spring, and that season a crop of oats will be harvested. After it is cut the clover will take possession of the land. The next season it will simply be immense, and grow taller than one's head, and blossom profusely. It will so shade the ground, however, that nothing else can grow, even the seeds scattered by the sweet clover will germinate during the fall. Now it is evident that nothing for the bees will be pro-

duced the following year, and the use of the land would be wasted.

I have decided to utilize the land during these off years by going over it with a disc harrow and thoroughly cutting up the stalks which also works the soil up nicely by going over it several times, and again sowing it with oats. Of course the ground is covered with the sweet clover seed, and will take care of itself.

If it is desired to have a crop of sweet clover every year, two pieces of land will be necessary, and keeping it alternately in oats and clover. Land treated in this way, if ever so poor, I believe, will be greatly benefited, as the great quantities of rotting stalks are about as good as a coating of manure.

Foul Brood among bees, in England, seems to be rampant. The *British Bee Journal* for May 23 has this to say about its spreading, and the negligent stupidity of those who are responsible for its ravages:

This appears to be one of the perpetual troubles of bee-keeping. The chief difficulty lies in the fact that although all the bee-keepers save one in a district may take every precaution to eradicate the disease, that very one, either by his negligence or stupidity, may again poison the whole district. Can any of our readers say whether it is a legal offence to sell bees suffering from foul brood, even when no guarantee is given?

Much obloquy has been cast upon expert work on account of some unprincipled men ignoring even the most rudimentary safeguards. We say most emphatically that it is unjust to thus condemn experts as a body for the sins of the few, but we do desire some means of so dealing with the black sheep, that they may for ever afterwards be prevented from demoralizing that which is a most honorable calling when properly conducted. We have reason to believe that some of these black sheep positively conceal the fact of foul brood being in existence lest they might lose custom. Was there a more short-sighted policy? Could the committee of the British Bee-keepers' Association consider this question in all its bearings?

Fruit Bloom.—Mrs. L. C. Axtell, of Roseville, Ills., in the *Farmers' Review*, remarks as follows about the bees, and fruit blooming all at the same time:

Since fruit-trees have been in blossom, the weather has been so cool and cloudy that most of the time bees have gathered very little honey, and as bees at this time of the year consume large amounts of honey in brood-rearing, many colonies will run out of stores unless fed. A few pounds of syrup fed now will pay the bee-keeper in large returns in a short time. Use the first time or two, sugar syrup, then add cheaper syrup as the bees learn to take it. This year is the first time I ever noticed the peach, cherry, and apple trees in bloom at the same time.

Peach Honey.—Mrs. L. Harrison remarks thus in the *Prairie Farmer* about the honey gathered this spring from peach blossoms:

The bees had a rare treat this spring—peach honey. There has been no bloom on peach trees in this locality since 1883, and it was a welcome sight. An older settler said to me lately: "I well remember the time when peaches were so plenty in Peoria that boys wouldn't steal them; nice ripe peaches would fall from the trees to the sidewalk, and no one cared to pick them up."

GLEAMS OF NEWS.

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Upon our desk lies a copy of this book, just fresh from the press; and all are invited to step up and look over our shoulders.

Mr. Doolittle says that he has secured, on an average, \$500 per year in rearing and selling queens; and, while he does not say whether he would have made more money had he devoted his whole time to honey production, he does say, in substance, that the queen business is too fascinating to be abandoned. We know exactly how he feels.

After subjecting every chapter of the book to a thorough examination, and differing from the author in some few points, Mr. Hutchinson concludes with the following:

There are, of course, a great many points that it is impossible to notice, even in so extended a review as this (all details are necessarily omitted), and we will close by most heartily urging all queen-breeders to read the book. Address the publishers.

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Friend Root then sums up Chapter VII, around which all the chapters centre, and the author's new method of queen-rearing, and the making of his queen-cups, etc., and says:

On page 50 is a nice engraving representing a lamp, above which is a small tin vat for holding melted wax. Beside the lamp is a cup of water. Three little sticks of wood (old rake-teeth) are lying upon a little block of wood. These teeth are taken from a common hay-rake, the teeth being whittled and sandpapered so as to be as near the shape of the inside of the queen-cell as possible. Three of these sticks are dipped successively into a little of the melted wax, above the lamp. The film is cooled in the cup of water, and is then dipped again. The operation is repeated a number of times, until the cell of wax has the proper thickness, when it is slipped off from the end of the rake-tooth, and more cells are made in like manner. After a sufficient number have been made, the end of the cell, or the

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For full particulars, as also a discussion of many important matters connected with queen-rearing, we will refer you to the work itself. The book is full of valuable hints, and will be worth all it costs to any queen-breeder. Price, \$1.00 by mail.

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"Scientific Queen Rearing" is the title of the latest addition to apicultural literature, by G. M. Doolittle, than whom no one is better qualified to speak on this subject. The volume consists of 176 pages, is well bound and printed, and as a frontispiece has the photograph, which, by the publishers' permission, we are enabled to reproduce.

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Bearing this important fact in mind, Mr. Doolittle, with that perseverance and continued application for which he is noted, studied for six long years to find a plan for rearing queens of quality. That plan he has now perfected, and this valuable book tells just how it is done, in language so terse and simple that any apiarist can follow it successfully.

Then follows a statement of the contents of the several chapters.

The *American Apiculturist* has this to say about it:

The work is nicely printed and bound. Until we can find time to look it over, the only opinion we can give of its value is the reputation of the author. When one can get nearly two hundred pages of bee-matter from the pen of such an author and bee-keeper as Mr. Doolittle, our advice is to lose no time in securing the work.

The *Canadian Honey Producer* gives it this notice:

DOOLITTLE ON QUEEN-REARING.—This work written by G. M. Doolittle, and published by Thomas G. Newman & Son, Chicago, Ills., is a credit to author and publishers. It is written in Mr. Doolittle's most pleasing style; modestly and simply does the author give us the results of his long and extensive experience. Any one wishing a book upon this branch of apiculture will do well to secure a copy.

Honey Statistics.—Under this heading, *Gleanings* for June has given six questions and several answers from persons in every State, showing the present condition and future prospects. The questions are introduced, answered and commented upon thus:

We herewith present our first installment of statistics for 1889. Our correspondents are located in such a way as to cover the entire United States. The average date at which the statements are rendered is May 10. The questions to which they reply are as follows:

- What per cent. of your bees have wintered?
- What per cent. of the bees in your locality do you estimate have wintered?
- What size of brood-frame is used most largely in your locality?
- What frame do you prefer?
- What per cent. of an average crop of honey has been secured in your locality up to date, as nearly as you can estimate?
- What are the prospects for a honey crop this year?

ANSWERS SUMMARIZED.

A summarized averaged statement for the entire United States, we find stands as follows:

- Of the bees owned by the special reporters, 91½ per cent. have wintered.
- Of the bees in the localities of the reporters, 83 3-20 per cent. have wintered.
- Seventy-five per cent of the localities reported are using the Langstroth frame exclusively, and the others use odd sizes, no one frame in particular.
- The frame used by the reporters themselves is about the same as stated in c.
- Where honey has been coming in, a full average has been secured up to date.
- The prospects throughout the United States are universally good—never better.

Now let us go back and see what the statistics mean. To question a we find the average of 91 per cent. is considerably better than the average for about the same date for last year, the ratio standing 91 to 84; but remember this rather has reference to those who reported on *their own* bees. The percentage of loss for the localities (bee-keepers, good, bad, and indifferent), is also much less this year—the ratio standing 17 to 33 in favor of 1889.

Observe that the reporters (who are in most instances the best and most successful bee-keepers we could select for the localities), have had much better success than the mediocre bee-keepers—those who cannot afford to own a good text-book or take a good bee-paper. The first-mentioned class lost only 9 per cent.; the last mentioned lost 17 per cent. This point was clearly brought out in the statistics for last year.

The answers to question c prove conclusively that the Langstroth frame is the universal standard throughout the length and breadth of our country. There are three times as many Langstroth frames, according to the reports, as all the rest of the frames put together, odd sizes included.

The ILLUSTRATED HOME JOURNAL will be clubbed with the American Bee Journal and both mailed to any address in the United States and Canada, one year, for \$2.00. The Contents of the June Number are—

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BIOGRAPHICAL.

MR. T. S. BULL.

A face, familiar to those who attend conventions in and around Chicago, is presented to our readers in this issue of the AMERICAN BEE JOURNAL. It is that of Mr. T. S. Bull, of Valparaiso, Ind., who is an enthusiastic bee-keeper and extensive honey-producer. We have also secured the following account of his life, which will be read with interest by all:

Theodore S. Bull was born in Cayuga county, N. Y., on March 20, 1829.



MR. T. S. BULL.

When about four years of age, he went with his parents to Onondaga county, and in 1850 from thence with his parents to Porter county, Ind., where he still resides.

Mr. Bull was reared on a farm, and received a good common school education. He became interested in bees when seven or eight years of age; and one day, upon hearing some older members of the family telling of a beehive having been cut, he learned where the tree was located, and after preparing a box, went in search of the bees. He secured about a quart.

Not knowing how to winter the bees, he was advised to bury them, as they would live without food. They all died. His interest survived, however, and grew with him. When there were bees in sight, he gazed at them as long as eye could see.

When he was about 16 years old, his father, seeing his great love for bees,

bought a colony, and also about this time a patent hive, containing three brood-chambers, one above the other, all interchangeable. From this time until he removed from New York, he spent all his leisure hours in studying and examining the work of the bees.

Some two years after coming to Indiana, he saw a swarm of bees going into a hollow tree. He managed to secure them, and kept them in a box-hive, with fair success, until the fall of 1871, at which time he saw the movable-frame hive (called the "Cottage Bee-Hive"), and became very enthusiastic. He had the bees transferred the same fall—5 colonies during the forepart of August, and one colony in September. They all wintered successfully.

The next spring he purchased 3 colonies—the only ones he ever bought. In the fall of 1872 he had 17 colonies, which increased (never losing a colony in wintering), until he had nearly 100 colonies. Since that time his losses have been light. He now keeps about 100 colonies, which produce several thousand pounds of excellent honey annually. His honey being of the finest quality, it is exported to most of the Northern States, and is sold in all the home markets.

Mr. Bull is an energetic farmer, having a pleasant and commodious country residence, and a large farm, gained by industry and good management.

He was married on Sept. 20, 1855, to Mrs. Ann M. Mason. There were born to them ten children, seven of whom (five sons and two daughters) survive; all but one are married, and, with his ten grandchildren, are living within a few miles of the paternal roof.

Mr. Bull is of medium size, of sanguine, nervous temperament, and fond of reading solid literature, especially that on bee-culture, of which class he takes the principal periodicals. He is a pleasant conversationalist, but has never had any taste for writing or composition.

Send Us the Names of bee-keepers in your neighborhood who should take and read the AMERICAN BEE JOURNAL, and we will send them a sample copy. In this way we may obtain many regular subscribers, for thousands have never seen a copy, or even know of its existence. This is one way to help the cause along.

A Modern Bee-Farm and its Economic Management, by S. Slimmins, of Rottingdean, Brighton, England, is the title of a new book of about 200 pages, printed on excellent paper, and nicely bound in cloth. Price \$1.00. For sale at this office.

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- Where honey has been coming in, a full average has been secured up to date.
- The prospects throughout the United States are universally good—never better.

Now let us go back and see what the statistics mean. To question a we find the average of 91 per cent. is considerably better than the average for about the same date for last year, the ratio standing 91 to 84; but remember this rather has reference to those who reported on *their own* bees. The percentage of loss for the localities (bee-keepers, good, bad, and indifferent), is also much less this year—the ratio standing 17 to 33 in favor of 1889.

Observe that the reporters (who are in most instances the best and most successful bee-keepers we could select for the localities), have had much better success than the mediocre bee-keepers—those who cannot afford to own a good text-book or take a good bee-paper. The first-mentioned class lost only 9 per cent.; the last mentioned lost 17 per cent. This point was clearly brought out in the statistics for last year.

The answers to question c prove conclusively that the Langstroth frame is the universal standard throughout the length and breadth of our country. There are three times as many Langstroth frames, according to the reports, as all the rest of the frames put together, odd sizes included.

The ILLUSTRATED HOME JOURNAL will be clubbed with the American Bee Journal and both mailed to any address in the United States and Canada, one year, for \$2.00. The Contents of the June Number are—

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BIOGRAPHICAL.

MR. T. S. BULL.

A face, familiar to those who attend conventions in and around Chicago, is presented to our readers in this issue of the AMERICAN BEE JOURNAL. It is that of Mr. T. S. Bull, of Valparaiso, Ind., who is an enthusiastic bee-keeper and extensive honey-producer. We have also secured the following account of his life, which will be read with interest by all:

Theodore S. Bull was born in Cayuga county, N. Y., on March 20, 1829.



MR. T. S. BULL.

When about four years of age, he went with his parents to Onondaga county, and in 1850 from thence with his parents to Porter county, Ind., where he still resides.

Mr. Bull was reared on a farm, and received a good common school education. He became interested in bees when seven or eight years of age; and one day, upon hearing some older members of the family telling of a beehive having been cut, he learned where the tree was located, and after preparing a box, went in search of the bees. He secured about a quart.

Not knowing how to winter the bees, he was advised to bury them, as they would live without food. They all died. His interest survived, however, and grew with him. When there were bees in sight, he gazed at them as long as eye could see.

When he was about 16 years old, his father, seeing his great love for bees,

bought a colony, and also about this time a patent hive, containing three brood-chambers, one above the other, all interchangeable. From this time until he removed from New York, he spent all his leisure hours in studying and examining the work of the bees.

Some two years after coming to Indiana, he saw a swarm of bees going into a hollow tree. He managed to secure them, and kept them in a box-hive, with fair success, until the fall of 1871, at which time he saw the movable-frame hive (called the "Cottage Bee-Hive"), and became very enthusiastic. He had the bees transferred the same fall—5 colonies during the forepart of August, and one colony in September. They all wintered successfully.

The next spring he purchased 3 colonies—the only ones he ever bought. In the fall of 1872 he had 17 colonies, which increased (never losing a colony in wintering), until he had nearly 100 colonies. Since that time his losses have been light. He now keeps about 100 colonies, which produce several thousand pounds of excellent honey annually. His honey being of the finest quality, it is exported to most of the Northern States, and is sold in all the home markets.

Mr. Bull is an energetic farmer, having a pleasant and commodious country residence, and a large farm, gained by industry and good management.

He was married on Sept. 20, 1855, to Mrs. Ann M. Mason. There were born to them ten children, seven of whom (five sons and two daughters) survive; all but one are married, and, with his ten grandchildren, are living within a few miles of the paternal roof.

Mr. Bull is of medium size, of sanguine, nervous temperament, and fond of reading solid literature, especially that on bee-culture, of which class he takes the principal periodicals. He is a pleasant conversationalist, but has never had any taste for writing or composition.

Send Us the Names of bee-keepers in your neighborhood who should take and read the AMERICAN BEE JOURNAL, and we will send them a sample copy. In this way we may obtain many regular subscribers, for thousands have never seen a copy, or even know of its existence. This is one way to help the cause along.

A Modern Bee-Farm and its Economic Management, by S. Simmins, of Rottingdean, Brighton, England, is the title of a new book of about 200 pages, printed on excellent paper, and nicely bound in cloth. Price \$1.00. For sale at this office.

QUERIES & REPLIES.

Combs Filled with Pollen for New Swarms.

Written for the American Bee Journal

Query 635.—When the bee-keeper has combs filled with pollen (otherwise good combs), are they suitable to put into the brood-chamber for new swarms?—Ont.

Yes.—A. B. MASON.

Yes.—R. L. TAYLOR.

Yes.—MAHALA B. CHADDOCK.

Most assuredly, *very suitable*.—A. J. COOK.

They are as good as any.—P. L. VIALLO.

I think so.—C. C. MILLER.

Yes, if not moldy; but we would not want many such in a hive for a swarm.—DADANT & SON.

I never tried it, but if I had such combs, I would not hesitate to use them for new swarms.—G. L. TINKER.

I would use them in the brood-chamber for new swarms, if necessary.—J. P. H. BROWN.

Yes; but I never saw a comb filled with pollen. Did any one?—G. M. DOOLITTLE.

Really, I do not know. I have used them, but I am not satisfied that the practice is economical.—E. SECOR.

I should certainly use them, and I think myself fortunate in their possession.—J. M. SHUCK.

Yes; the bees will arrange the pollen to suit themselves.—C. H. DIBBERN.

Yes, the bees will soon clean out the old pollen.—MRS. L. HARRISON.

Yes, sir; the bees will take care of the old-pollen business.—JAMES HEDDON.

I would rather not use them, though a small quantity of pollen will do no harm.—J. M. HAMBAUGH.

Yes. If the pollen is dry and hard, it is well to soak the combs until it is soft; and much of it can be thrown out with the extractor. If soft, the bees will clean it out in a very little time.—M. MAHIN.

Take a tooth-pick and stir up as much of the pollen as you can, turn the comb over, and jar out as much of it as you can. Treat the other side the same, and the swarm will take it more quickly than they would gold!—WILL M. BARNUM.

If the combs have been well kept during the winter, so as to keep the pollen sound and sweet, as many as two such combs may be profitably used in each hive proposed for swarms.

Such combs may also be profitably used in the brood-chambers of all good colonies in the early spring, instead of feeding meal, etc., as a substitute for pollen.—G. W. DEMAREE.

Most certainly they are, unless so completely filled with pollen as to give the queen no room. In this answer I assume that the pollen is all right as such. Ample cell-room must be given, both for eggs and storage.—J. E. POND.

Yes; they are suitable, and will be readily appropriated by the bees.—THE EDITOR.

Evaporating Water from Honey in the Cells.

Written for the American Bee Journal

Query 636.—Do bees evaporate water from honey or nectar, after it is placed permanently in the cell preparatory to sealing?—Nebr.

Yes.—DADANT & SON.

Yes.—J. M. HAMBAUGH.

I suspect that they do.—C. C. MILLER.

Yes, through the warmth of the hive. The honey evaporates continually till sealed, and often still later.—A. J. COOK.

Yes, and that same honey may absorb water, or evaporate it, after it is sealed.—JAMES HEDDON.

I think that they do. It seems clear that the evaporation does take place. The heat of the cluster appears to hasten it.—EUGENE SECOR.

If Mr. G. M. Doolittle has seen straight, and guessed correctly, we might say no; but I am "kinder 'fraid" he is mistaken.—A. B. MASON.

Yes, they do evaporate honey or nectar, just as you please to call it.—J. P. H. BROWN.

Yes, and may even after it is sealed, by means of the heat of the colony.—R. L. TAYLOR.

Yes. Instinct teaches them not to seal it till it is sufficiently evaporated to keep.—C. H. DIBBERN.

Yes. The heat of the hive keeps up evaporation as long as the air in the hive has access to the honey.—M. MAHIN.

Yes. The circulation that is kept up in the hive takes the moisture out of the honey as long as it is unsealed.—MAHALA B. CHADDOCK.

Chemically, honey and nectar are two different things. Nectar is principally cane-sugar, and contains no glucose; while honey is principally natural glucose, and contains no cane-sugar. Nectar is gradually transformed into honey by the action of

formic acid, incorporated into it by the bees. At the stage referred to in this query, there may still be some of the sugar not entirely transformed, and, no doubt, there are both nectar and honey.—P. L. VIALLO.

Probably; but the bulk of all nectar carried in is co-operated from the bodies of the bees during the night of each day succeeding a flow of nectar.—G. L. TINKER.

Only as the heat from the hive does it, the same as would be done in a warm room. The bees do their part in evaporation by manipulation.—G. M. DOOLITTLE.

No more than is evaporated by the heat of a colony; honey sealed or unsealed, if kept in a warm room, gradually becomes thicker.—MRS. L. HARRISON.

Yes. The quiet humming so often heard upon hot days and nights, is caused by the bees circulating a current of air through the hive. Other bees stir the honey with their tongues or trunks.—WILL M. BARNUM.

Nectar, when first gathered, is quite thin and watery, and if then sealed up, would prove insipid, and speedily becomes sour from fermentation. Leaving the cells unsealed, allows the watery excess to evaporate, thus "ripening" (as it is called) the nectar, so that it becomes the honey of commerce.—J. E. POND.

I think not, except as they may contribute to this end, by their heat and the circulation of air produced in the hive by their movements. That the bees do *handle* the nectar and thus reduce it, I have no doubt. After the bee puts the honey into the cell to stay, and labels it with waxen caps, after-evaporation, must be trifling.—J. M. SHUCK.

According to my observations, nectar in the flower varies in density, or what we call "thickness," in precise relation to the condition of the atmosphere at the time the secretion of nectar is going on; and when the nectar is quite "thin," the bees, guided by instinct bordering upon judgment itself, spread the nectar over as wide a comb-surface as they can command, to hasten evaporation; and as the nectar "thickens," it is transformed to the cells at the tops of the combs where the evaporation goes on till "thick" enough to be finally sealed. How much more rational are these practical facts than is the "digested nectar" theory!—G. W. DEMAREE.

Evaporation of the water in the honey takes place in the hive, and is caused mainly by the heat and air therein—and these are controlled by the bees.—THE EDITOR.

CORRESPONDENCE.

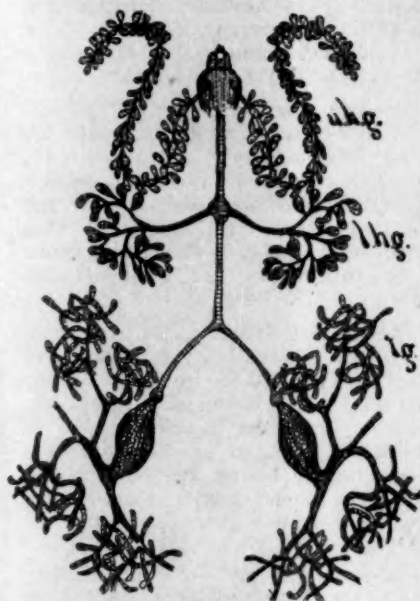
BEE-GLANDS.

Some Facts about the Glands in Honey-Bees.

Written for the American Bee Journal
BY PROF. A. J. COOK.

A "gland" is an organ which takes elements from the blood of animals, or juices of plants, and forms from these a liquid called a secretion. Thus nectar in flowers is a secretion formed by the glandular cells of the blossom. Our own livers are glands which secrete the bile.

The essential structure of a gland is a membrane with epithelial cells on one side, and blood on the other. Such



The Glands in Bees, Greatly Magnified—
Modified from Cheshire.

a simple structure is called a "membranous" gland. Such glands line all the closed cavities of the body, as the joints, the thorax, abdomen, etc. Often this membrane dips, and we have bags, pocket-like, or follicles. Such glands are called "follicular."

We see examples of follicular glands in the lining membrane of the mouth. Often these pockets are prolonged into tubes, and we have "tubular" glands, as seen in the lining coat of the stomach. Most frequently the tubes branch and re-branch, like a twig, and resemble a bunch of grapes (see Fig.), and are then known as "racemose" glands. All of our salivary or spittle glands are of this kind.

Our bees are in some respects the most remarkable of animals. Their larder, unlike that of most animals, is not filled with a single kind of food. They subsist on pollen—a very hearty nitrogenous food (a regular pork-and-beans diet), and on nectar, a highly-flavored dish of carbo-hydrates. To find these, they have a nose of exquisite performance, situated in the antennæ, or horn-like organs attached to the head. To keep this very sensitive nose always clean, and to collect their food, they have a development of mouth organs and legs that are not surpassed even in the trunk of the elephant, or the still more marvelous human hand.

Again, in the rapid development of the bee from the egg to imago, and in the wondrous accomplishments of the queen—which lays often double her weight of eggs daily—we see what good food can do. To accomplish this, requires an alimentary system of very high development; and so, in the digestive tube of the bee, we have a perfection unequaled, I think, in the whole animal kingdom.

Passing those wonderful structures—the tongue, mouth, honey-stomach, stomach-mouth, and true stomach—let us study the position, structure and function of the several glands of bees.

There are three pairs of glands well developed in the worker-bees. The first pair (u. h. g. in the Fig.) are high up in the head, and consist each of a tube with appended follicles. They are packed within or between the compound eyes, and empty on the side of the floor of the mouth, just where their secretion could mix most readily with pollen, when eaten by the bees.

The next glands are the lower head-glands (l. h. g. of the Fig.). They are situated in the head, below the others, are racemose, and empty into a long duct, which comes from the third, or thoracic, glands. These latter (l. g. in the Fig.) are situated in the thorax, are also compound racemose, and, with the lower head-glands, empty just at the base of the tongue, where their secretions would surely mix freely with nectar as the bees gather it from the flowers.

Thus from the position of the mouths of these ducts, no less than the admirable demonstrations of Schœnfeld, we are very sure of the functions of all these secretions. The secretion from the first is undoubtedly to digest the pollen. These glands are rudimentary in the queen, and absent in the drones, which shows that the queen and drones are fed in part by the workers. These are best developed in the young workers. This is as we should expect. The young workers may be said to digest the albuminous

food for larvæ, queen and drones; to digest this pollen, and form the rich jelly, they need the upper head-glands, and in them we find these glands the largest, and very active. It seems likely that the queen is not fed in winter. If this is true, it shows again the probability that bees when rather quiescent, need no more nitrogenous food than is already in their blood and tissues.

The probable function of the secretion from the other four glands, is to digest the nectar—to change the cane-sugar of nectar to the grape-sugar of honey; for all honey is completely or partially digested nectar. As honey is not all fully digested, we see why the drones and the queen need these glands. They take honey, and unless the honey is fully digested, they need this secretion to complete it.

I have little doubt but that the reason why some honey, like basswood, contains more cane-sugar, is because it is gathered very rapidly, and so the nectar is only partially digested. When bees gather from 10 to 30 pounds of nectar a day, as a colony often does from linden, we do not wonder that some undigested nectar is emptied into the cells. This also accounts for the great variation of honey in its composition—in relative amounts of cane and grape sugar—and the reason why the ray of polarized light shifts so astonishingly from left to right, or *vice versa*; and why chemists are so likely to pronounce pure honey, adulterated.

There is another interesting fact connected with this subject, viz: When we eat cane-sugar, we have to digest it, while honey is already digested for us. I have heard good physicians say that some of our worst diseases of the liver and kidneys were, they believed, caused by eating cane-sugar; that such diseases were now more prevalent than of old, is because cane-sugar is more eaten now. If this suggestion is true, then in persuading people to eat honey we are lifting from the labors of their digestive organs—are causing the bees to do for them what the bees do for their own larvæ, and are so conserving the health of the people. Thus the inspired writer in commending honey, was wise beyond the science of his day.

Agricultural College, Mich.

Always Mention your Post-Office, County and State when writing to this office. No matter where you may happen to be for the hour when actually writing—never mention anything but your permanent address. To do otherwise leads to confusion, unless you desire your address changed. In that case state the old as well as the new address.

NEW YORK.

Report of the First Erie County Convention.

Written for the American Bee Journal
BY OREL L. HERSHISER.

At the call of Mr. Charles Penton, of East Aurora, N. Y., several prominent bee-keepers of Erie county assembled at his house on the afternoon of May 29, 1889, for the purpose of perfecting an organization.

Mr. Penton stated briefly the objects of the meeting, which were, to bring the members of the bee-keeping fraternity into closer relations for social and intellectual purposes; to impress upon its members the growing importance of the honey-industry; to bring more prominently before the public the healthfulness of a common commodity, both for domestic and manufacturing purposes; and to educate the honey-producers in the latest and most approved methods of the production of the purest and most delicious of sweets.

On motion by Hiram P. Hopkins, Charles Penton was chosen chairman of the preliminary meeting, and Mrs. Chas. Foville, Secretary.

After considerable discussion, it was decided that the society be known as the "Erie County Bee-Keepers' Association." The election of permanent officers for the ensuing year resulted as follows:

President, Charles Penton, of East Aurora; 1st Vice-President, Robert Meatyard, of Ellicott; 2nd Vice-President, L. D. O'Dell, of Protection; Secretary, Mrs. Foville, of South Wales; and Treasurer, Mr. S. S. Sleeper, of Holland.

A Board of Directors was selected as follows: T. S. Johnson, of Morilla; J. D. Havens and J. McMillan, both of East Aurora, and Ralph Evans, of Brant.

By special resolution, Orel L. Hershiser, of Big Tree Corners, was chosen special correspondent. The yearly dues were fixed at 50 cents per member, by the payment of which all bee-keepers, and others interested in bee-keeping, may become members. Ladies were exempted from the payment of dues.

Orel L. Hershiser was elected a delegate to represent the Association at the International Bee-Keepers' Association, to be held at Brantford, Ont., Canada, on Dec. 4, 5 and 6, 1889.

After a vote of thanks to Mrs. and Miss Penton, for their generous hospitality, the new-born association adjourned to meet in the village of East Aurora, N. Y., on June 15, 1889.

Big Tree Corners, N. Y.

THE BUTTERCUPS.

Written for the Farmers' Home
BY NELLIE F. O'NEILL.

They laugh and dance all through the day,
They nod and smile in winsome way,
No other flowers are half so gay—
The merry-hearted buttercups.

Atop the verdant hill they dwell,
Adown the grassy slope as well;
They lift their heads within the dell—
The golden-crested buttercups.

They stand beside the river deep,
And at their shadows gayly peep;
They smile upon the refuse heap,
The lowly-hearted buttercups.

The mansion's lawn they scatter o'er,
Like bits of gold on emerald floor;
They blossom by the beggar's door—
The simple-hearted buttercups.

They fore the grand cathedral wave,
The prison yard in sunshine lave;
They nestle on the baby's grave—
The tender-hearted buttercups.

They glow and glisten everywhere,
In city parks, in meadows fair.
Ah! well their regal crowns they wear—
The kingly-hearted buttercups.

BEE-SMOKERS.

The Best Kind of Fuel to Use in Bee-Smokers.

Written for the American Bee Journal
BY T. F. BINGHAM.

On page 230 is a query on this subject, and the answers to the same. I was much interested in them, as an interested party, and also as having experimented considerably with various kinds of fuel, etc.

The query, while one of a specific kind, does not specify in what smokers the fuel is to be used. This feature makes all imaginable difference—so far as the facts are concerned—and precludes the possibility of the real value of answers. Generally the answers seemed to indicate that the correspondents used direct-draft smokers, as sound stove-wood and also rotten wood was regarded as valuable.

If the querist will bear in mind that none of the "cold blast" smokers have draft sufficient to burn sound wood, the answers will be plainly misleading, if applied to them; but if to the direct-draft smokers, no confusion will occur, as almost any kind of material will burn in them.

While rotten wood is valuable as a quick means of kindling a sound-wood fire in the direct-draft smokers, it is much more trouble to control and keep burning steadily than sound stove-wood. The sound wood also makes a much stronger smoke; i. e., it is not steam and air mixed, but clean, strong, pungent smoke, containing very little creosote, and freer from condensation.

Especially is this true if the stove-wood is placed in the sunshine, on sunny days, to dry it perfectly. It cannot be too dry, nor dried too often. It does not burn faster for being dry, neither slower. With long, dry sticks, the direct-draft smoker is simply a base-burner—that is, sound wood burns only at the bottom, close to the grate, and this is one of several valuable features peculiar to sound wood.

Here it may be well to specify a weakness or two incident to rotten wood. One of them is, that it does not last long; the reason why it does not is, that it takes fire all over, and so, while yielding a cloud of smoke and steam, puts the operator to the needless trouble of refilling so often.

Of course, if you have a smoker in which only rotten wood and rags can be made to burn, the question of fuel decides itself. On the contrary, if your smoker will burn anything combustible, you have a wide field to select from, and convenience in obtaining may be to you the feature of all others determining which is best.

I trust that the above may aid in the convenience and comfort of selecting bee-smoker fuel.

Abronia, Mich.

CANADA.

Report of the Haldimand, Ont., Convention.

Written for the American Bee Journal
BY E. C. CAMPBELL.

The Haldimand Bee-Keepers' Association met at Nelles' Corners on Tuesday, May 28, 1889. The minutes of the previous meeting were read and confirmed.

The President read a number of postal cards relative to securing a lecturer for the meeting, and the reasons why one was not secured.

Best Package for Comb Honey.

The President said that the first thing was, to get the honey in pound sections, and well finished in the hive; they should then put the sections in cases holding a dozen, glassed on both sides, so that the sections can be seen without opening the case. He also said it was important that the sections should be all of good quality, both front and back.

Best Package for Extracted Honey.

The President said that for shipping in large quantities the 60-pound tin-can was the best he had used; and for small packages, the 10-pound pail was preferable. The pail was useful after the honey was taken out; and for re-

tailoring in stores, he preferred the pint glass-jars, and jelly-glasses with screw tops.

Mr. Kindree agreed with the President as to the packages for shipping honey, but for show purposes he preferred glass. Several other members expressed themselves in similar terms.

Eighteen members present reported an aggregate of 445 colonies last fall, and 397 colonies this spring.

It was decided to make the same offer as last year with reference to prizes to be offered for honey and apiarian supplies at the Cayuga, Jarvis and Rainham shows, and delegates were appointed to attend to the matter.

The next meeting will be held at Fisherville, on the last Saturday in August, 1889.

E. C. CAMPBELL, Sec.

BEE-HIVES.

"The Coming Hive" is Already Here and in Use.

Written for the American Bee Journal
BY J. E. POND.

Mr. J. W. Tefft, in his article on "The Coming Hive," on page 346, gives some tiptop points, and two paragraphs on page 348, from the article, are so much to the point, that I quote from them as a text. He says that the coming hive should be "constructed with the view of giving the queen full power of reproduction, and hereby hangs the whole 'law and gospel' in bee-keeping." Again, he says: "Keep the bees in one strong colony until after the honey-harvest," etc.

Now in the above, Mr. Tefft hits the nail on the head squarely; the point he makes is correct, and cannot be gainsaid or denied. The point, however, remains—what is the size of hive that will accomplish just this? Do different localities require different sizes? To the latter question I unhesitatingly say, No! and, further, that were it not for an evident desire on the part of many to be "cocks of the walk," we should have less bother in regard to size of hives, and hear less in regard to this, that or the other claim of originality or improvement.

The matter of protected hives need not be considered in this connection at all, as any size of hive can be protected by chaff or dead air-spaces, in its manufacture, or by any outer covering when needed, if needed at all; the point simply being what interior size of hive will best accommodate the varying requirements of a colony of bees with an ordinarily prolific queen, during a given or any season. The discussion on this point has taken a

wide range in the past; and at times, I am sorry to say, some ill-temper has been displayed, but certain *proofs* have been set out in the way of statistics, that must stand as such for all time.

Now what is the evidence? The ordinary "Langstroth hive" (and I now speak of the interior dimensions of that Langstroth hive that carries a frame that will take in length four 4½x4½ sections, and being 14½ inches wide), has given the best general results, and to-day stands unrivalled as an "all-purpose hive." It is large enough for any queen; it can be contracted to any required size; it can be made double-walled, filled with chaff or not, or can be protected with an outer covering, as desired; and it is free from any patented complications. Now what more can be desired? I have used this hive for years; none has been found better, and I have tested about all; none can be found that in the hands of the ordinary bee-keeper, will prove more profitable, or practicable.

I speak with positiveness on this subject, for the proofs sustain me; and till statistics show differently from their present aspect, I shall stick where I now stand.

North Attleboro, Mass.

DRONES.

The Rearing of Drones from Pure Queens.

Written for the American Bee Journal
BY L. STACHELHAUSEN.

On page 260 is reproduced some parts of Mr. Doolittle's new book, in which is stated the idea that, "a pure queen, however mated, must produce a pure drone of her own variety," is a theory only derived from the fact that a virgin queen can lay eggs, which will produce drones; and he says that the drones of a mismatched queen are not pure at all. Although Mr. Alley and some other bee-keepers are on his side, nevertheless it is a mistake.

That those drones are pure, is no mere theory, but a proven fact. When Dr. Dzierzon introduced a single Italian colony into Germany, he reared at once many queens, which were of course mated with German drones. In the second year he used the drones of these queens exclusively. He never received another queen, nevertheless his Italian bees remained pure, and were even improved in color and working-qualities, by careful selection. For years he always received the first premium for his queens in competition with queens directly imported from

Italy. Many other experiments have proven that those drones are pure.

Mr. Doolittle explains at some length that he is willing to prove his view. I may ask here, has he ever made this experiment? If we take into consideration that he sells Italian queens, it does not seem probable that he kept only black drones in his apiary. He may have experimented in an out-apiary, but how far was this from any other colony? What certainty have we that not a drone of any other colony mated with one of his queens? The way in which Mr. Doolittle recommends to have drones of a certain race only in an apiary, will do very well for practical purposes—for rearing queens for the market; for a large percentage of the queens will be purely mated; but for an experiment of this kind, it is much too uncertain. Somewhat better is the so-called "Koehler's method," but hereby too some few queens may be mismated.

Italian bees have been introduced in this country for many years, and consequently it is nearly impossible to say that any colony is entirely pure black. Six years ago I introduced the first Italian queen into this locality, and now a bee-keeper six miles from my apiary has among his over 200 colonies, not a single one certainly pure black, and no other Italian queen was introduced here except by me.

By Mr. Doolittle's experiment, any one of the colonies which are selected to rear these drones, may supersede the queen unknown to the bee-keeper, and then produce half-pure drones. If in this or any other way, a little trace of the yellow race is in the stock, some yellow queens will appear. If from these queens more are reared, and always selected in the color line, the black traces are more and more bred out; some queens may be mated with hybrid drones again, and you have real hybrids.

So we see that this experiment gives occasion for so many mistakes, that it is no proof at all. If very carefully conducted, I know that it will result to the contrary of Mr. Doolittle's view.

The idea that these drones are not quite pure, has its origin in the experience of queen-breeders, that some of the queens reared in the apiary are darker than other ones and their mother, and produce darker workers; but this is nearly always so, because the Italian bee is far from being a quite pure race. The idea that every queen imported from Italy is necessarily pure, is a great mistake generally made in the United States. If, now, some darker queens are bred, the bee-keeper thinks that some black "blood" originates from these drones;

but this black "blood" was at first in the imported queen.

Not everywhere in Italy are yellow bees, and the bee-keepers there rear queens for the trade, and select in the color line in just the same way as we do here in the United States. More than this, Italian bee-keepers introduced Cyprian queens to better the color of their bees.

It is well known that the progeny of a mismated queen is not uniformly marked—some of the bees seem pure yellow, some pure black, and some show mixed "blood." This is quite different from other animals, and makes it possible, by careful selection, to breed a purer race, and even from hybrids we could rear pure Italians, by selecting for a long time in the yellow line; and we could rear pure black bees, if we select in the black line. But here and there one bee will show some markings of the other race, and in this condition is the Italian bee just now.

Therefore it is necessary to breed in the color line, if we want pure Italian bees; but the beauty of the bee should not be the only reason to select a queen to breed from, and in-breeding should be avoided.

If I cannot agree in this respect with Mr. Doolittle, I think that he is correct in saying that the appearance of the drone many times will lead to mistakes. I have often observed that the drones of a queen which should produce hybrid drones, look nicer and more yellow than really pure drones. If we find some drones with two broad, yellow or red bands, similar to those of the workers, we can be sure that they are "half blood;" pure Italian drones are darker in appearance, and have small golden rings only; but the only sure way to select good drones, is to look at the worker progeny of their grand-mother for color as well as working-qualities.

Selma, Texas.

MAINE.

Report of the Western Maine Convention.

Written for the Bee-Keepers' Advance.

The Western Maine Bee-Keepers' Association met at the residence of J. B. Mason, at Mechanic Falls, Me., on May 7, 1889. The President being absent, at 7 o'clock p.m. the convention was called to order, and J. Pike, of Livermore Falls, was elected President *pro tem*.

The larger part of the evening was spent in the regular business of the Association, after which a letter was

read from Mr. E. M. Dunham, of Freeport. His bees had not done so well the last few years as formerly, but he believes that he will now succeed better.

The convention then adjourned to meet at 9 o'clock the following morning.

On May 8, at 9 o'clock the convention was called to order with J. Pike in the chair. J. S. Fuller, S. H. Stockman and Wm. Holden were appointed as a committee on exhibits. J. B. Mason was selected as a committee to act with the committee of the Maine State Association in making arrangements for the exhibit at the State Fair, and in procuring a speaker to deliver an address on apiculture at the State Fair. Mr. Mason was instructed to draw on the treasury for such sums as, in his judgment, were advisable to procure the speaker for the occasion.

The convention then adjourned to meet at 1 p.m., at which time the following were elected as officers of the association for the ensuing year:

President, J. B. Mason, of Mechanic Falls; Vice-President, J. N. Dyer, of Durham; Secretary, J. F. Fuller, of Oxford; and Treasurer, J. Pike.

The first subject discussed was "The sale of virgin queens." The sense of the convention was, that the sale of virgin queens through the mails, was not to the best interest of bee-keeping.

Prevention of Increase.

"The best method to prevent increase was next considered. Mr. Pike hives the new swarm beside the old colony, placing the new where the old stood, and removing the stand from the old to the new; in five days he shakes all the bees from the old hive in front of the new one, and repeats the shaking until all the bees are hatched out; thus all the working-force is kept in one hive, and although they swarm and are hived, no increase is obtained.

How to Secure Increase.

The next question was, "The best method for securing increase." J. B. Mason would make swarms by drawing combs of capped brood, nearly ready to hatch, one from each of the seven hives, and shaking all bees back into their own hive, then remove an eighth hive to a new stand, and place this new colony on the eighth hive's stand, giving the colony a laying or virgin queen, or a queen-cell, or even let them rear their own queen; but in the last case, a frame of bees just hatching should be substituted for one of the frames of brood. This plan gives satisfaction, as it is very nearly faultless, and the new colony is strong, although but a small amount is taken from any hive at one time.

In regard to the effect that the past poor seasons had on bee-culture, it was thought that they would redound to the best interests of those good bee-keepers who continue in the business; that the unreliable and shiftless ones had been sifted out; and that the markets would be cleaned up, ready for the new crop of 1889. It was thought necessary to have a poor season occasionally, in order to clear the market of the poor grades of honey.

The Secretary was instructed to prepare a programme for the next meeting, to be sent with the notice of that meeting.

The committee on exhibits reported that they had examined the Root and Heddon hives, and the smokers of Messrs. Bingham and Quinby, and the Muth Cold-Blast smoker.

The convention then adjourned to meet at the residence of J. Pike, at Livermore Falls, Me., in September, 1889.

J. F. FULLER, Sec.

FEEDING.

Bees Starving—The Rearing of Early Queens.

Written for the American Bee Journal
BY CHAS. A. BUNCH.

For the last week or ten days the bees have had a pretty hard time, unless they had honey in the combs that was left from their winter stores. White clover is in bloom, but the weather is cool and cloudy, with some rain, so that the bees have gathered but little nectar for some time. Their winter stores are mostly used up for brood-rearing, which caused me to feed full colonies this late in the season, for the first time since I have been keeping bees.

The handiest way that I can feed my bees, is to give brood-combs of honey, if I have them; if not, I use granulated sugar made in a syrup flavored with honey. This syrup I have warm in a tea or coffee can, and I go from hive to hive, lift out a frame that is empty, and pour the syrup into the comb, which can be done nicely by holding the comb about two feet below the can of syrup. Colonies whose hives have tight bottom-boards, can be fed in the evening at dark, by tilting the hive back a little. A tin separator pushed in the hive at the entrance, will serve as a trough to pour the syrup on, which will run into the hive and disturb the bees but little. I do not claim that there is anything new for old bee-keepers in these ways of feeding, but it may help some beginner in bee-keeping.

As I almost always have my hives full of bees and brood some time be-

fore white clover blooms, I thought that I could spare some bees for queen-rearing early in the spring, to see how it would result; so April 9, I removed a Syrian queen and 6 brood-combs with brood in them, and gave them a brood-comb with eggs from one of my best Italian queens, with some more combs of honey.

About April 29 three queens hatched out of five cells that were built; the cells were placed in nucleus hives a day or two before they hatched, and in due time the queens were laying, and doing finely, as far as I could see. So far this season I could get only five or six good cells built in full colonies of bees.

I agree with Mr. Chas. Dadant, as given on page 311, that large brood-chambers are the ones to test the prolificness of queens; for I place considerable value on a queen-bee that is prolific, and first-class in other respects.

La Paz, Ind., May 29, 1889.

BEES' HUM.

Spring Work—Cleaning up the Hives, etc.

Written for the Country Gentleman
BY GEO. A. STOCKWELL.

The honey season of 1889 has begun. The flow of nectar is not in a swelling stream, but leak as little as it may, it encourages the bees, and the great family begins "to rock a thousand cradles," and to knead a thousand loaves of pollen-honey bread for the occupants.

This returning to the business of life is an interesting feature in bee-keeping. Like impatient children kept in by illness or bad weather, the bees appear to fret and to contend with themselves in their eagerness to rush forth. Early in the season, in sunny, mid-day hours they frolic and play, we know not how many games, in the porch of the hive. Every hive should have a porch. The bees appreciate it as much as the bee-keeper enjoys his veranda.

The first work of spring is to clean house. The hive with movable bottom now shows its convenience. The body is lifted aside, and the bottom-board swept. This is not enough. Every frame in the body of the hive should be taken out. Dead bees, and wax-litter from the uncapping of the cells may lodge between, mold, and spoil the comb if not removed.

Will not the bees remove dead bees and all litter? They will, and one man with a wheelbarrow will carry off a mountain in time. If a dead bee be lodged and secured between combs, the bees will carry it away by piece-meal.

But there is work to be done more satisfactory than tugging all summer at the uncleanness of a hive. Ten minutes work of the bee-keeper places the hive in good condition, and the occupants have only to brush up, repair a little comb, and go about their regular business; until the time comes to put on the surplus boxes, the bed-spreads and comforters should be kept on, and well tucked in. The bees cannot be too warm up to June 1.

At mid-day set a table before them, place a feeder under the quilt filled with warm honey. The colony may be strong, but the object in feeding is to encourage the queen that she may lay many eggs, that comb-cradles may be full, and full-grown workers may be numerous when the flood-tide of honey comes.

Bee-keeping has been discouraging for two years, but it cannot be that a third will follow in succession. Let every farmer—every one—remember that the more bees we have the greater will be the distribution of the fructifying pollen, and the greater will be the yield of all plants.

Providence, R. I.

CONVENTION DIRECTORY.

1889. Time and Place of Meeting.

Aug. 31.—Haldimand, at Fisherville, Ont.
R. G. Campbell, Sec., Cayuga, Ont.

Sept. —.—Maine, at Livermore Falls, Me.
J. F. Fuller, Sec., Oxford, Me.

Dec. 4, 6.—International, at Brantford, Ont., Canada.
R. F. Holtermann, Sec., Brantford, Ont.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Rolling in the Honey.—J. W. Eckman, Richmond, Texas, on May 28, 1889, says:

Bees are rolling in the honey very fast from wild China and horse-mint. Everything bids fair for a large honey-yield in this part of Texas. My bees gathered no surplus last season, on account of too much rain. All crops are fine this season. We have been eating roasting-ears for two weeks.

Bees in a Starving Condition.

—Jas. W. Tefft, Collamer, N. Y., on June 3, 1889, writes:

I have reared one queen this season, and have 3 colonies to work in the sections—this was previous to May 15; since that time it has been cold and

rainy, and the bees could not go out to gather from white clover, raspberries and other plants in full bloom. On June 1 I examined every colony, and found them full of young bees, from 6 to 8 frames full of brood, and some drones; but I do not think that there is 10 pounds of honey in the apiary, which is something remarkable for this part of the country at this season of the year. I shall feed only those colonies that throw out brood. On June 2 and 3 bees were working lively, although it rained, and there was a high wind. I examined 10 colonies of bees of my neighbors, and found them all in a starving condition. This is rather discouraging, is it not?

Dry Weather in Minnesota.—

Wm. Enke, Rochester, Minn., on June 1, 1889, says:

The season here is very discouraging. The continued dry weather killed most of the clover, so that now but little is to be seen. Bees are now gathering some honey-dew, which just keeps them breeding well. The prospect now is that we will not get any white honey except from bass-wood. We have frost two or three times a week.

Snow-Storm and Frost.—A. H.

Lind, Calumet Harbor, Wis., on May 31, 1889, says:

This morning we had quite a snow-storm, enough to make the ground white for about an hour. I fear that if the weather does not change very soon, our crop of white honey will be very small. Corn, potatoes, beans and grapevines have been damaged the last week by frost, and I am afraid for the linden blossoms. Clover is coming into bloom, but yields no honey. I put 17 colonies of bees into the cellar last fall, took out 14 in good condition, and sold one, leaving 13 for the season's work.

Colonies Short of Stores.—W.

D. Markham, Hart, Mich., on June 3, 1889, writes:

Having kept bees for 25 years or more, I never before have had this experience, and being warned by Mr. Doolittle and others quite often to look to the bees right away after apple-blossom, and having been cold and wet for about two weeks, I began to be uneasy, and on investigation I found reason to be a good deal alarmed. In walking around among them (I have about 100 colonies), I saw at the entrances of a few hives an unusual amount of dead bees. I quickly

removed the cover (I thought it was too cold before to look after them much), and I found that 4 colonies had given up entirely, and 5 more that still had life, which, with some warm honey poured over them, soon started them on the buzz again. This was on May 27. I soon got about three gallons of food ready, and decided that it was not too cold and wet to see if my bees were about to starve, for they had always been pretty good to me. I found, on investigation, about 25 colonies getting pretty short of stores, and now every day or two I am dishing them up a good square meal. It is still raining now (Monday morning), and I shall have to continue to feed, or the number will increase. Bees have not been able to be out for more than two hours in over two weeks; before this they were doing so well, and I began to have visions of swarms. I think that we will have a good season, as this wet time will make white clover in abundance. I am located in the fruit-belt of Michigan. Peaches and plums are not injured by frost, and the trees are very full.

Simple Swarming Device.—J.

B. Wilcox, of Manistee, Mich., describes a very simple swarming device as follows:

Take a piece of board about 2 inches wide, of the desired length, and a dish-pan with large wire ears; cut a notch in the end of the board, or pole, so that the wire on the ear of the pan will just go through the space between the two. With the pan on the pole, hold it just under the cluster, and give the limb a shake, then take the pan down quickly, and pour the bees in front of the hive. If this does not get the queen, it should be repeated.

Unfavorable Weather.—Joshua

Bull, Seymour, Wis., on June 1, 1889, writes:

The early part of the spring was very encouraging for bee-keepers in this vicinity. March was remarkably fine for that season of the year, in this latitude. April was, on the whole, quite favorable, and the forepart of May was exquisitely fine—all that even the most fastidious could expect or desire. Fruit-bloom commenced on May 4, and continued up to about the middle of the month, with the weather warm and fine; the bees were just booming, and the strong colonies persisted in building queen-cells, and preparing to swarm. White clover blossoms began to appear on May 15, and were quite numerous by May 20; our expectations were running high in an-

ticipation of an early and bountiful honey harvest; but our warmest hopes received a severe chill, when on May 22 a series of frosty nights, interchanged with cold rains, set in, and have continued up to the present time; since which bees have done nothing, being confined to the hive the most of the time. The fruit crop is ruined, or at least greatly injured by the frost; white clover blossoms have all disappeared, and vegetation is at a standstill. I do not know whether the bees are hibernating, or generating, or meditating what to do. We shall think it a boon if the clouds depart soon, so that the sun can once more shine through.

Good Prospect for Basswood.

—Green R. Shirer, Greene, Iowa, on June 2, 1889, says:

Bees have not done much for the past two weeks, on account of cold weather—wind from the north, with frost last Friday morning. White clover is just beginning to bloom. Basswood will be very full of bloom.

Heavy Frosts—Feeding Bees.

—Rev. Stephen Roesse, Maiden Rock, Wis., on June 1, 1889, writes:

The heavy frosts every night for the past week or so have greatly damaged our spring bee-pasture. Bees are idling about, and feel much inclined to robbing. It is hardly safe to open a hive. All the colonies are getting quite strong, in spite of the cold and backward weather, and some new swarms have been hived by bee-keepers residing in the river bottoms, where willows were plentiful. All sorts of tender crops are frozen down to the ground, such as potatoes, tomatoes and corn. Small grain crops look yellow and thin on account of the dry weather. I have been feeding my bees up to now, and will have to continue in order to keep up breeding. Our hope for a good honey season is not entirely blasted, as the white clover and basswood honey is still to be looked for in the near future.

Results of Swarming, etc.—

John Boerstler, Vashon Island, Wash. Ter., on May 31, 1889, writes:

As my bees are through swarming, I will give the number of new swarms that I received this spring from 5 colonies, viz: No. 3 swarmed on April 19, 22 and 26; No. 2, on May 1; No. 7, May 8, 16 and 22; No. 4, on May 10, 14, 17 and 20; No. 5, on May 14 and 26; No. 4, on May 18; and No. 7, on

May 19. As I had not hives enough for all, I put 2 swarms into one hive, and sold 2 swarms for \$10. That leaves me 16 new swarms yet. I have taken out 20 pounds of honey, and there are 50 lbs. more to take out, but as I am very busy with strawberries, I will not take it out for 2 or 3 weeks yet. Bees are doing finely, and I think that Washington Territory will be a great bee-country; I am satisfied that it will pay here. I have been waiting for three years to tell what I think of bee-keeping here, and I cannot help thinking that I am right about it. I worked with bees in Illinois for 20 years. You will hear from me again in the fall, with a big crop of honey from the 5 colonies that I started with, for I am pretty sure that I will have a good report. I sold all the honey I had, at home, at 20 cents per pound, and I could sell more at present, but I am too busy to take it out of the hives.

How to Know Pures Drones.

—Ira N. Lyman, St. Peter, Nebr., says:

1. I would like to know if there are any points about an Italian drone by which a person can tell a thoroughbred drone. 2. My drones are of a yellowish color on the lower part of the abdomen, the rings are dark next to the body, and there is a narrow yellow stripe at the rear of the broad, dark band. The yellow stripe is not a bright yellow, as in the workers. 3. I would like to know if the yellow part of the abdomen, next to the body, is counted as one band on the three-banded workers in the Italian race of bees. 4. How long, generally, is it after the drones make their appearance, before the bees swarm, if all things are fair for bees, and the weather is good?

[1. No; you must judge them by the workers.

2. The drones vary in color in different colonies.

3. Yes; count the yellow part next to the thorax.

4. Swarming is generally indicated by the young queen being ready to emerge—not by the drones.—Ed.]

Convention Notice.

The International Bee-Keepers' Association will meet in the court-house, at Brantford, Ont., Canada, on December 4, 5, and 6, 1889. All bee-keepers are invited to attend, and State and District bee-keepers' societies are requested to appoint delegates to the convention. Full particulars of the meeting will be given in due time. Anyone desirous of becoming a member, and receiving the last Annual Report bound, may do so by forwarding \$1.00 to the Secretary.—R. F. HOLTERMANN, Sec. Brantford, Ont., Canada.



ALFRED H. NEWMAN,
BUSINESS MANAGER.

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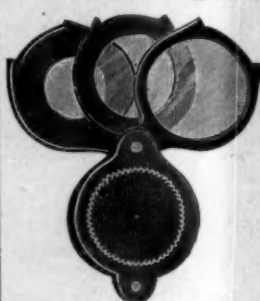
A Home Market for honey can be made by judiciously distributing the pamphlets, "Honey as Food and Medicine." Such will create a demand in any locality at remunerative prices. See list on the second page of this paper.

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We Club the American Bee Journal for a year, with any of the following papers or books, at the prices quoted in the LAST column. The regular price of both is given in the first column. One year's subscription for the American Bee Journal must be sent with each order for another paper or book:

	Price of both.	Club
The American Bee Journal	1 00	...
and Gleanings in Bee-Culture	2 00	1 75
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The Apiculturist	1 75	1 65
Bee-Keepers' Advance	1 50	1 40
Canadian Bee Journal	2 00	1 80
Canadian Honey Producer	1 40	1 30
The 8 above-named papers	5 65	5 00
and Langstroth Revised (Dadant)	3 00	2 75
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International Bee-Convention.

—The Pamphlet Report of the Columbus, Ohio, Bee-Convention can be obtained at this office, by mail, postpaid, for 25 cents. This pamphlet contains the new bee-songs and words, as well as a portrait of the President. Bound up with the history of the International Society, and a full report of the Detroit, Indianapolis and Chicago conventions, for 50 cents, postpaid.

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Alfalfa Clover.—For cultivation of this honey-plant, see page 245, of 1888.—We supply the seed at the following prices: —Per lb., 22c.; per peck, \$3.00; per half-bushel, \$5.50; per bushel of 60 lb., \$10.00. If wanted by mail, add 10 cents per pound for bag and postage.

Apiary Register.—All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and begin to use it. The prices are as follows:

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" 100 colonies (220 pages)	1 25
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Clover Seeds.—We are selling *Alsike* Clover Seed at the following prices: \$8.00 per bushel; \$2.25 per peck; 25 cents per lb. *White Clover* Seed: \$10.00 per bushel; \$2.75 per peck; 30 cents per lb. *Mellilot or Sweet Clover* Seed: \$6.00 per bushel; \$1.75 per peck; 20 cents per lb.—by express or freight.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

Honey and Beeswax Market.**MILWAUKEE.**

HONEY.—We quote: White 1-lbs., 15¢@16c.; 2-lbs., nominal; dark 1-lbs., 12¢@13c. Extracted, white, in tin and pails, 9¢@10c.; medium, in kegs and ¼-bbls., 7¢@8c.; white, in kegs and ¼-bbls., 8¢@9c.; dark, 5¢@6c.
Market good for the season of year, prices firm for good qualities, and old crop is being closely sold out.
BEESWAX.—25¢@29c.
June 6. A. V. BISHOP, 142 W. Water St.

DETROIT.

HONEY.—Best white 1-lbs., 14¢@15c. Market is dull and lower, but not overstocked. Demand slow.
BEESWAX.—22¢@23c.
Apr. 30. M. H. HUNT, Bell Branch, Mich.

KANSAS CITY.

HONEY.—We quote: White 1-lbs., 15¢@16c.; dark, 10¢@12c.; California white 2-lbs., 11¢@12c.; amber, 10¢@11c. Extracted, white, 7¢@8c.; dark, 5¢@6c. Our market is in good condition for the new crop.
BEESWAX.—20c.
May 11. CLEMONS, CLOON & CO., cor 4th & Walnut.

ST. LOUIS.

HONEY.—Extracted, in barrels, 6¢@6½. Excellent demand for clear, bright in barrels. Dark, 5¢@6c.
BEESWAX.—Scarce at 23c. for prime.
May 22. D. G. TUTT & CO., Commercial St.

NEW YORK.

HONEY.—Extracted in good demand. We quote: Fine orange-bloom at from 7¢@7½c.; off grades of Southern, 6¢@7c. per gallon.
BEESWAX.—Scarce, at 26¢@27½c. for good.
June 6. HILDRETH BROS. & SEGELKEN, 28 & 30 W. Broadway, near Duane St.

BOSTON.

HONEY.—We quote: Best white clover 1-pounds, 18¢@20c.; best 2-lbs., 17¢@18c. Extracted, 8¢@9c. Sales have been checked a little on account of maple sugar and syrup being so plentiful. Sales of honey are very slow.
May 22. BLAKE & RIPLEY, 57 Chatham Street.

CINCINNATI.

HONEY.—We quote extracted at 5¢@8c. per lb. Best white comb honey, 11¢@12c. Demand is fair. Arrivals are plentiful of new comb and extracted honey from the Southern States, where the season had a most prosperous beginning.
BEESWAX.—Demand is good—20¢@24c. per lb. for good to choice yellow, on arrival.
May 21. C. F. MUTH & SON, Freeman & Central Av.

Money in Potatoes, by Mr. Joseph Greiner. Price, 25 cents, postpaid. This is a complete instructor for the practical potato-grower, and explains the author's new system in 40 interesting lessons. It is for sale at this office.

Cheap Extracted Honey.—We have a keg of DARK HONEY, weighing 164 pounds, net, suitable for feeding to bees, which we will sell at 6 cents per pound, delivered on the cars here.

Advertisements.**A TWO-CRATE CHAFF HIVE**

FOR \$2.75. Send for Price-List and terms to Agents. J. A. ROE, 23Atf UNION CITY, IND.
Mention the American Bee Journal.

NOT TOO LATE

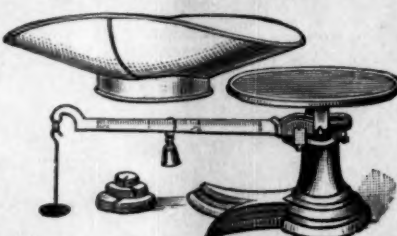
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Written for the American Bee Journal

Useful Scales**The Union or Family Scale.**

This Scale has steel bearings, and it weighs from ¼-ounce to 240 pounds. Price, with a Single Brass Beam, as shown in the illustration, \$3.00. With Double Beam for taking the tare, \$3.50.

The Little Detective Scale.

This little Scale is made with steel bearings, and a brass Beam, and will weigh accurately ¼-ounce to 25 pounds. It supplies the great demand for a Housekeeper's Scale. Prices:

Single beam, no scoop	\$2.00.
" " tin	2.50.
Double " no scoop	3.00.
" " tin	3.50.

☞ All orders filled promptly.

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923 & 925 W. Madison St., - CHICAGO, ILL.

TANSY PILLS!

Safe, Certain and Effectual. Particulars 4c. WILCOX SPECIFIC CO., Phila., Pa.
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BRIGHT ITALIAN Bees and Queens,
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12A1y H. H. RUETER, Baxter Springs, Kan.
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Heddon Hives For Sale.

TO the purchaser of my 29 New Heddon Hives (never used) at \$3 each, I will give a New 4-Frame Stanley Automatic Honey-Extractor, worth \$20.00, f. o. b.
E. D. KEENEY, ARCADE, N. Y.
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April 1st. For 60 Days. 1889.

WE have a large stock of ONE-PIECE SECTIONS on hand, which are first-class. To reduce stock, we will name a very low price on them, in 1,000 or 100,000 lots. Also Hives, Smokers and Brood-Frames. Do not fail to tell us what you want, or send for our Price-List. Address,

SMITH & SMITH,
24Rtf KENTON, Hardin Co., OHIO.
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TRY THEM

ONE of our Beautiful Golden Italian QUEENS, reared by our New, Practical and Natural Method.

Warranted Queens, either Carniolan or Italian, each, \$1; Select, each, \$1.25; Tested each, \$1.50.

We have had 30 years' experience in the Rearing of Queens, and 25,000 of our customers will tell you that the Purity, Beauty and Quality of our Queens are not excelled.

HENRY ALLEY,
24Rtf WENHAM, Essex Co., MASS.
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NEBRASKA.

AT Plattsmouth, Nebr., I sell 3-frame (size 8½x 17½) Nucleus Colonies of ITALIAN BEES, with Queens, at \$2.50 each—brood in 2 frames or more—¾ to 1 lb. of Bees.
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Address, H. G. FRAME,
10E13t NORTH MANCHESTER, IND.
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GLASS PAILS**FOR HONEY.**

THESE Pails are made of the best quality of clear flint glass, with a bail and a metal top and cover. When filled with honey, the attractive appearance of these pails cannot be equalled by any other style of package. They can be used for household purposes by consumers, after the honey is removed, or they can be returned to and re-filled by the apiarist.

Prices are as follows:

To hold 1 pound of honey, per dozen,	\$1.60
" 2 pounds " "	2.00
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A New Book on Bees, and Dadant's Comb Foundation. See advertisement in another column.

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Having filled all Orders, I can from now on send

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18Rtf LITTLE HICKMAN, Jessamine Co., KY.
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I HAVE been importing and breeding this race exclusively since 1884. My orders have each year more than doubled. Send Postal for Descriptive Circular, or \$1 for a Choice Untested Queen; \$5 for ¼-doz.; \$5 for Benton's best grade Imported Queen.

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